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EXAMINER

HARVEY, DIONNE

ART UNIT PAPER NUMBER

2643

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/975,996

Applicant(s)

YOUSSEFI, THIERRY

Examiner

Dionne N Harvey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/15/01
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 5 recites the limitation "the support adjustment means" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hosick (US 6,073,887)** in view of **Smith (US 5,949,370)**.

Regarding claim 1, Hosick teaches a spacecraft for geosynchronous orbit, **see column 2, line 64-65**, including an antenna **34** for communication with the earth **20**, which reads on "A geosynchronous satellite including antenna means for communicating with an area of the terrestrial surface"; In **column 3, lines 61-63** Hosick teaches attitude control means for the satellite whereby the north **21** and south **22** panels of the satellite are always parallel to a north/south axis through the earth, **see figure 1**, and therefore panels **21** and **22** are never directly exposed to solar radiation,

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which reads on "characterized in that it includes attitude control means whereby north and south walls of the satellite are at all times parallel to the solar radiation". In **column 4, lines 12-15**, Hosick teaches that any variety of antennas may be used with the satellite. Hosick does not specifically teach adjustment means for an antenna such that the antenna means are always pointed towards the terrestrial coverage area.

Smith teaches, in **column 1, lines 18-21**, that it is desirable to provide some means for reorienting a satellite antenna relative to the satellite body so as to facilitate communication with the earth surface, which reads on "and adjustment means so that the antenna means are always pointed towards the terrestrial coverage area".

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Hosick and Smith, equipping the satellite body of Hosick with mechanically steerable antenna means, for the purpose of maintaining current illumination coordinates regardless of orbital location, or selectively illuminating various portions of the earth surface.

Regarding claim 2, in **figure 1**, Hosick teaches that solar panels **32** are perpendicular to the solar radiation, whose surface is fastened to the body of the satellite.

Regarding claim 3, in **figure 1**, Smith teaches that the satellite includes a support **16**, for all antenna means **12**, that can be oriented relative to the body of the satellite including the north and south walls, see **column 3, lines 1-4 and column 5, lines 46-49**.

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Regarding claim 4, also **in figure 1**, Smith teaches that telecommunication electronics means **22, also see column 3, lines 37-41**, are fastened to the support **16** for the antenna means, via frame **24**.

Regarding claim 5, as best understood regarding the U.S.C 112 second paragraph rejection above, the combination of Hosick and Smith teaches that the attitude control means and the support adjustment means are fastened to the body of the satellite.

Regarding claim 6, in **column 5, lines 49-53**, Smith teaches that radiation from respective ones of the feeds are summed to produce a scanned beam, thereby reading on "scanning means".

Regarding claim 7, In **column 1, lines 17-21 and lines 50-54**, Smith teaches that the adjustment means for the antenna means may be used for pointing corrections and/or to modify the position of the coverage area.

Regarding claim 9, Hosick teaches, **in column 5, lines 43-46** that the high temperatures of the east and west satellite faces may be used to radiate thermal energy. In **column 5, lines 51-55**, Hosick further teaches that the satellite includes multiplexer equipment, which is capable of functioning at high temperatures. Hosick does not clearly teach that the multiplexer is disposed on the outside face of the satellite. However, since the multiplexer is capable of functioning at high temperatures, it would have been obvious for one of ordinary skill in the art at the time of the invention to dispose the multiplexer on the outer eastern or western face of the satellite, so that

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the heat dissipation of the multiplexer would assist in improving the satellite's ability to radiate thermal energy.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hosick (US 6,073,887)** in view of **Smith (US 5,949,370)** as applied to claim 1, and further in view of **Polle (US 5,794,891)**.

Regarding claim 8, the combination of Hosick and Smith does not clearly teach that a white paint is provided on the north and/or south walls of the satellite. In **column 4, lines 11-17**, Polle teaches the use of white paint on those surfaces of the satellite which are kept in shadow. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Hosick, Smith and Polle, using white paint on the north and/or south faces of the satellite body, thereby providing those surface with higher emissivity.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hosick (US 6,073,887)** in view of **Smith (US 5,949,370)** as applied to claim 3, and further in view of **Roth (US 6,229,501)**.

Regarding claim 10, in figure 10, Hosick teaches that the antenna means includes reflectors **34, 50, 51**. Hosick does not clearly teach that the reflectors **34, 50, 51** are connected to their supports by carbon arms. In **column 3, lines 40-45**, Roth teaches reflectors **34, 50, 51** which are connected to their supports by carbon arms. It would have been obvious for one of ordinary skill in the art at the time of the invention to

incorporate the carbon arms of Roth into the combined invention of Hosick and Smith, since said rolled carbon arms are heat-stable and resistant to bending.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hosick (US 6,073,887)** in view of **Smith (US 5,949,370)** in view of **Roth (US 6,229,501)**, as applied to claim 10, and further in view of **Palmer (US 6,308,919)**.

Regarding claim 11, the combination of Hosick, Smith and Roth, does not clearly teach that the support arms are generally H-shaped. In **column 3, lines 65-68**, Palmer teaches the use of H-shaped arms for the support of antenna reflectors. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Hosick, Smith, Roth and Palmer, using H-shaped support arms, as constructed by Palmer, for the purpose of providing easily deployable and extendable reflector supports.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Hosick (US 6,073,887)** in view of **Smith (US 5,949,370)** as applied to claim 3, and further in view of **Kustas (US 6,087,991)**.

Regarding claim 12, The combination of Hosick and Smith does not clearly teach that the support **16** for the antenna means is constructed separately from the body of the satellite. In column 1, lines 15,16,35-38 and lines 50-51, Kustas teaches that the solar panel sub-system, power sub-system and antenna sub-systems in satellites are known to be separately constructed, as claimed. It would have been obvious for one of

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ordinary skill in the art at the time of the invention to combine the teachings of Hosick, Smith and Kustas, separately constructing the satellite body from the antenna means, such that each sub-system may be separately supported and operated by those having tailored expertise in the respective technologies.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne N Harvey whose telephone number is 703-305-1111. The examiner can normally be reached on 9-6:30 M-F and alternating Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on 703-305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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